PCT/EP2003/011830

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference D80271PC	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP2003/011830	International filing date (*day/month/year*) 24 October 2003 (24.10.2003)	Priority date (*day/month/year*) 25 October 2002 (25.10.2002)
International Patent Classification (IPC) or national classification and IPC C08J 3/00		
Applicant STOCKHAUSEN GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 29 April 2004 (29.04.2004)	Date of completion of this report 12 January 2005 (12.01.2005)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

International application No.
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-46, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the claims:

pages 1-20, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the drawings:

pages 1/3-3/3, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/fig _____

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

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I. Basis of the report

1. This report has been drawn up on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

Continuation of point 5:

(A) The features "in a mixer" and "wherein the first mixing operation is a continuous mixing process" have been inserted into claim 1. Although both features are described in lines 1 to 2 on page 8 of the original disclosure, this passage of the text logically presupposes that back mixing takes place such that a stream of new polymer particles entering the mixer is superimposed by a stream of polymer particles opposed to said new stream and already present in the mixture. This feature cannot be found in the new claim 1. This claim is not therefore supported by the original disclosure.

(B) According to the applicant, claim 7 is based on the original claim 5. According to this original claim, back mixing necessarily takes place in the first mixing step, whereas the new claim 7 also encompasses back mixing solely in the second mixing step. The new claim 7 is not therefore based on the original disclosure.

Since the above-mentioned amendments are not based on the original disclosure, they cannot be taken into account in the following analysis of novelty and inventive step.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2-13	YES
	Claims	1, 14-20	NO
Inventive step (IS)	Claims		YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims		NO

2. Citations and explanations

Citations

D1: WO-A-9849221

D2: US-A-5002986

Novelty (PCT Article 33(2))

Examples 7 to 9 (Experimental Procedure 1) of D1 describe a process in which a superabsorbent polymer (ethoxylated trimethylolpropane triacrylate) in water
(i) is stirred with a high-speed rotor in a mixer for 2 minutes in a first mixing step, and
(ii) is further stirred in a low-speed mixer for 20 minutes in a second mixing step.

Aluminium trichloride was added to the polymer prior to the above mixing process. The superabsorbent polymer obtained is used, for example, in diapers. Post-crosslinking of this polymer is described in examples 27 to 30.

The process described in D1 and carried out in accordance with Experimental Procedure 1 is therefore identical to the process described in claim 1 of the present application, disregarding the unsupported amendments. Consequently, disregarding the unsupported amendments,

this process and the products obtained therefrom (claims 14 to 20) lack novelty over D1.

Irrespective of this, the question as to whether a continuous process is described in Experimental Procedure 1 of D1 does not affect the nature of the product produced by said process. Even taking the unsupported amendments into account, the subject matter at least of product claims 14 to 20 therefore lacks novelty over the products obtained in Experimental Procedure 1.

Furthermore, any mixing operation with a mixer, including that described in the continuous mixing processes of Experimental Procedures 2 and 4 of D1, involves the mixer being switched off. This necessarily means that the mixer cuts its mixing speed from a maximum mixing speed, corresponding to the first mixing step of the present application, to zero, corresponding to the second mixing step of the present application. Even taking the unsupported amendments into account, at least the subject matter of independent claims 1 and 14 to 20 therefore lacks novelty over the processes described in Experimental Procedures 2 and 4.

D2 (example 1) discloses a process wherein a superabsorbent polymer in water and aluminium sulphate is stirred at 12000 rpm, corresponding to the first stirring step claimed, and the stirrer is then turned off. When the stirrer is turned off, it will cut its speed from 12000 rpm to 0 rpm and will thus pass through a lower-speed stirring phase corresponding to the second stirring step claimed. D2 therefore describes both stirring steps and thus prejudices the novelty at least of process claim 1, disregarding the unsupported amendments. Since the processes are identical, the products in claims 14 to

20 must also lack novelty over D2.

Regarding the arguments presented by the applicant in substantiation of the novelty of the product claims, it should be noted that the claimed products are not restricted to those produced with back mixing. The question as to whether back mixing leads to product properties different from those in D1 and D2 therefore remains irrelevant to the assessment of the novelty of the product claims. Furthermore, even if the product claims were restricted to products obtained with back mixing, it would have to be assumed, unless there were experimental evidence to the contrary, that back mixing of this kind does not modify the product properties and cannot therefore contribute to the novelty of the product claims.

Inventive step (PCT Article 33(3))

Irrespective of the above objections concerning a lack of novelty, the following observations are made on inventive step:

(i) It is not clear what information is deducible from the AAP and rewet values referred to in the examples. It is also unclear what is meant by the CRC value referred to in the examples. It must be assumed, therefore, that the claimed stirring step is an arbitrary measure that cannot constitute an inventive step.

(ii) D1 can be considered the closest prior art. The examples do not, however, permit a comparison with D1, since the comparative example (no stirring step) is not representative of D1 (stirring step is carried out). Without a comparison with the closest prior art and a surprising effect deducible therefrom, no inventive step can be acknowledged.

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(iii) As explained above in detail, neither the fact that the claimed process is a continuous operation nor the use of two stirring speeds can be considered to be a distinguishing feature over D1. An inventive step cannot therefore be acknowledged on the basis of any advantages deriving from these features.

Consequently, no inventive step can be acknowledged in respect of the subject matter of any of claims 1 to 20.